

REMARKS/ARGUMENTS

In response to the objection to the Abstract, page 3 of Applicant's Preliminary Amendment filed with the application includes a replacement Abstract which satisfies the requirements.

Claim 17 has been amended to be dependent upon claim 1.

Claims 1-3, 6-22 and 24-27 were rejected over previously cited Korbik, U.S. Patent No. 6,843,958 in view Polish Utility Model PL104515. To aid the Examiner, Applicant submits an English translation of the Polish Utility Model supplied to me by the Applicant. The Applicant's Art Citation filed herewith identifies the Polish Utility Model again, and this time indicates that the English translation is provided. No fee should be due for this citation as it does not supply a new reference.

When one considers the invention and its purpose and considers the prior art, it can be clearly seen how the invention is an important improvement in this art.

The Korbik patent is an example of a structure on which the present invention improves, as Applicant's original specification stated with respect to the German patent equivalent and as Applicant has stated in the several Office Action Responses in this application.

Korbik shows coolant pipes 13 above and 14 below, which are secured to the cooling plate and pass through the furnace jacket 15. This causes the previously fully discussed problem as to the cooling plate and the cooling pipe.

Korbik discloses a larger diameter element 16 in the inward direction or to the left of lower coolant pipe 14. However, Korbik's element 16 is neither a pipe nor a holding pipe but, as described in Korbik's U.S. specification at column 3, lines 53-56, it is a compensator 16:

The lower cooling medium pipe support 14...are
connected in an unchanged way with compensators
16 to the furnace steel jacket.

Compensator 16 of the pipe 14 may be part of that pipe, and probably compensates for the very type of deformation, movement, etc., that the present invention deals with in a remarkably different manner, as recited in both of claims 1 and 22:

each coolant pipe suction of the coolant pipe
sections being led to the outside of the outer casing

plate inside a respective holding pipe of the holding pipes.

There is no disclosure or suggestion that Korbik's compensator 16 is outside the cooling medium pipe 14 or that the cooling pipe 14 passes through the compensator 16. Korbik's compensator 16 is not suggestive of the claim element "the cooling plate having holding pipes thereon leading to the outside" as in claim 22 or "comprising" holding pipes, as in claim 1.

The Examiner repeatedly refers to cooling (holding) pipes in Korbik. But since both the cooling pipe 14 and the compensator 16 in Korbik is one item, as disclosed, then it is not two separate pipes, one inside the other. The upper cooling pipe 13 in Korbik has no compensator there, so that Korbik's pipe 13 would be subject to the deformation and distortion which the present invention is designed to cure. Were Korbik to suggest holding pipes around each of the coolant pipes as recited in all of Applicant's claims, Korbik would not have omitted the protective holding pipe 16 at the cooling pipe 13, as that would defeat the purpose of having holding pipes at all. Whether structural failure occurs at one or at all of the coolant pipe sections passing through the front, that would be a failure.

Present claims 1 and 2, in contrast say that each pipe section is led to the outside through a holding pipe. This structure solves a problem, and the problem is apparently not recognized in the Korbik reference nor is it resolved. One cannot assume that the compensator 16 in Korbik is a holding pipe, as there is no disclosure that it is a separate pipe from the cooling pipe and as there is no disclosure of a compensator 16 or other structure that protects the upper cooling pipe 13 in Korbik.

Now referring to the translation of the Polish Utility Model PL104515, the Polish reference does not say that the tubes 2 are holding pipes in the sense of the claims hereof. The tubes 2 in the Polish reference are the cooling pipes:

tubes 2 are disposed in five parallel rows, supplied
with water during cooler operation (lines 26-27)

More significantly, the Polish Utility Model does not show a furnace or a furnace wall. It merely shows a cooler or radiator that would be inside a furnace wall, which is not illustrated. The cooling tubes of the cooler pass through bushings 3 on the cooling tubes. The bushings 3 are

not shown passing through the furnace wall, as there are no furnace or furnace walls illustrated through which bushings may pass. The Polish Utility Model does not show a furnace wall, or how the cooling pipe passes through a furnace wall, or if there is a holding pipe that might surround the cooling pipe within it. That the cooler of the Polish Utility Model may be used in a metallurgical furnace does not disclose the structure of the furnace nor how the cooling pipes pass through the furnace wall.

As the Polish Utility Model does not show how those cooling pipes are led through the furnace shell, it does not show holding pipes. There is no suggestion or disclosure of leading the cooling pipe to the outside of the outer casing plate or furnace shell inside any separate holding pipes. It appears that the Polish publication is no more relevant than Korbik to serve as a publication suggesting holding pipes and for that reason the claims are distinguishable.

The Polish Utility Model shows that the cooling pipes 2 are connected with the cooling plate and exit the cooling plate via bushings 3. A bushing by its nature and as also in the Polish drawing is fitted on the pipe without clearance, and thereby directly supports and/or guides the pipe. This bushing is not a holding pipe as in amended claims 1 and 22, where there is a clearance between the holding pipe and the cooling pipe section within, a clearance so both that the cooling pipe, and the holding pipes can also do their different jobs. The bushing fixed on the pipe is in effect part of the cooling pipe and is not a separate holding pipe as Applicant claims and as shown in Figs. 1 and 5 hereof.

The specification description of Fig. 5 has been amended in order to point out what was originally disclosed in Fig. 5 and what is inherent from the description and operation of the device of the invention.

Accordingly, Applicant disagrees that it would have been obvious to modify Korbik by providing the structure in the Polish Utility Model. But even if Korbik were modified by the structure in the Polish Utility Model, that would teach one skilled in the art only to better support the coolant pipes as they pass out of the radiator itself by providing a bushing on the cooling pipe, a standard supporting stiffener at a point of passage. In contrast, neither reference alone or in combination would teach one skilled in the art to pass the coolant pipe sections through the furnace wall while the coolant pipe sections are in the holding pipes, with a clearance between the holding pipe and the coolant pipe, to provide the necessary support and protects the cooling pipe

against the effects of deformation, a problem experienced with the Korbik design and avoided with the present invention.

Accordingly, the rejected claims are allowable.


Claim 4 was additionally rejected over the same references and further in view of the U.S. patent to Stein. Reconsideration is requested since claim 4 is dependent upon claim 1, the allowability of which has already been shown.

Accordingly, allowance of the rejected claims is requested.

Respectfully submitted,

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